Concentrations (µg/L) of phthalate metabolites in urine samples collected from 101 firefighters in 2010 - 2011 for the Firefighter Occupational Exposures (FOX) Project

Phthalate metabolite[a, b]	Geometric Mean (95% Confidence Interval)	Selected Percentiles				Detection Frequency	Limit of Detection (LOD)
		25th	50th	75th	95th		
mBzP	**8.18** (6.56 – 10.20)	3.93	7.76	14.9	41.3	100%	0.25
mBP	**10.6** (8.83 – 12.82)	5.69	10.6	20.2	40.6	97.0%	2.0
mCPP	**1.88** (1.46 – 2.42)	0.819	1.69	4.07	21.1	98.0%	0.125
mCHP	*	*<LOD*	*<LOD*	*<LOD*	*<LOD*	4.0%	0.50
mCEPP	**12.3** (10.1 – 14.9)	5.89	12.4	23.2	58.3	100%	0.50
mEP	**52.9** (38.1 – 73.4)	20.6	46.6	168	740	79.2%	8.0

a. See page two for full names of phthalate metabolites.
b. See page three for explanation of terms.

* Geometric mean was not calculated because the chemical was found in less than 65% of the study group.

Abbreviations, full chemical names of analytes, Chemical Abstracts Service Registry Numbers (CASRNs), and the parent phthalate(s) for analytes measured

Abbreviation	Full Name of Analyte	CASRN[a]	Parent Phthalate(s)
mBzP	Mono-benzyl phthalate	2528-16-7	Benzylbutyl phthalate (BzBP)
mBP	Mono-*n*-butyl phthalate	131-70-4	Di-*n*-butyl phthalate (DBP), Benzylbutyl phthalate (BzBP)
mCPP	Mono-(3-carboxypropyl) phthalate	66851-46-5	Di-*n*-octyl phthalate (DOP)
mCHP	Mono-cyclohexyl phthalate	7517-36-4	Dicyclohexyl phthalate (DCHP)
mCEPP	Mono-(2-ethyl-5-carboxypentyl) phthalate	40809-41-4	Di-2-ethylhexyl phthalate (DEHP)
mEP	Mono-ethyl phthalate	2306-33-4	Diethyl phthalate (DEP)

a. See page three for explanation of CASRN.

Explanation of Terms

µg/L	Micrograms of the chemical per liter of urine.
Metabolite	Metabolites are formed when chemicals, such as environmental contaminants or drugs, are broken down or changed through natural processes in the body. Metabolites are measured in biomonitoring studies as indicators of exposure to certain chemicals.
Geometric mean	The geometric mean is an estimated middle value of a set of numbers. This is different than the average, also called the "arithmetic mean." A geometric mean is sometimes calculated when the set of numbers contains some extreme values. For example, the geometric mean of the set of numbers "1, 2, 2, 3, 4, 5, 5, 6, 10, 100" is calculated by *multiplying* all ten numbers together and then *raising the product to the 1/10th power*, giving 4.8. To compare, the arithmetic mean is calculated by *adding* all ten numbers and *dividing by 10*, giving 14.
95% confidence interval	A *sample* is a subset of a larger *population*. A confidence interval for a statistical measure is a range of values estimated from *sample* data. This interval is likely to include the true value of the statistical measure, such as a geometric mean, for the larger *population*. A 95% confidence interval for a statistical measure implies that we are 95% confident that the range includes the true *population* value for this measure.
Percentiles	Percentiles are best explained by an example: if the 75th percentile is 1.5 µg/L, this means that 75% of participants had levels less than or equal to 1.5 µg/L.
Detection frequency (percent detected)	The percentage of study participants with a measurable level of a chemical in their blood or urine.
Limit of detection (LOD)	The LOD is the lowest level of a chemical that the laboratory can measure in blood or urine.
Below the limit of detection (<LOD)	Below the LOD means that the laboratory could not detect the chemical. This may have been because the chemical was not present at all or because it was present at such a low level that the laboratory could not measure it.
CASRN - Chemical Abstracts Service Registry Number	The CASRN is a unique identification number assigned to individual chemicals by the Chemical Abstracts Service division of the American Chemical Society.